GW170817: A VO interoperability

ESO + HST (ESASky)

ESO + LIGO/Virgo

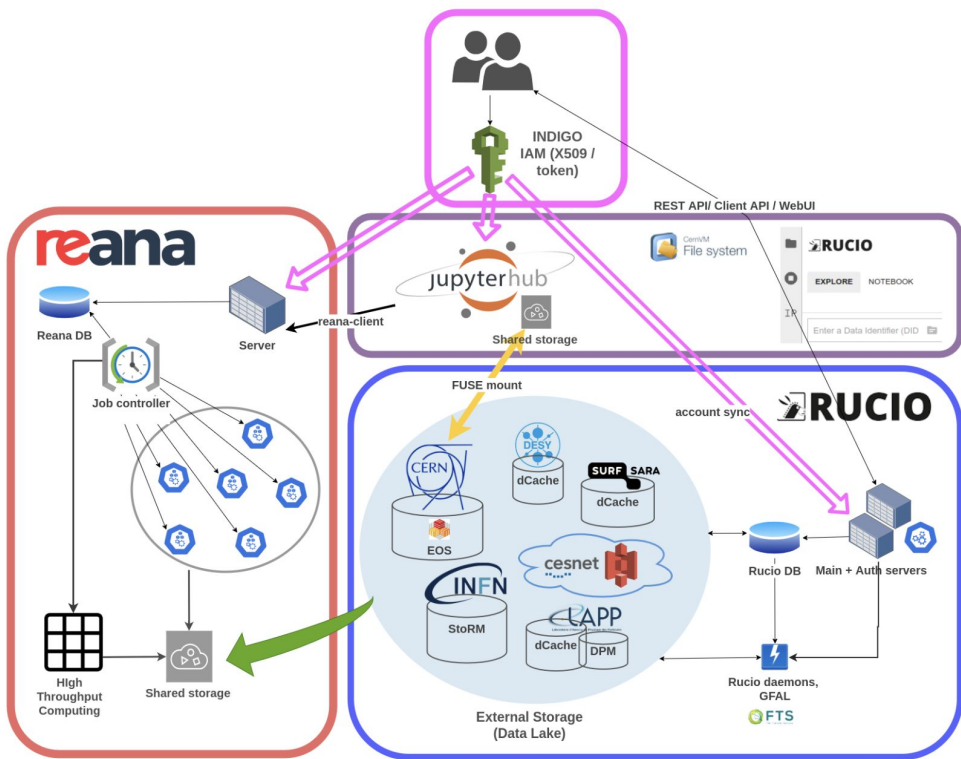ESO La Silla Paranal + ALMA

VO inside!

3D Glade Galaxies (INFN)

Providing new interop.

From ESCAPE Virtual Observatory Connecting ESFRI data to the EOSC using the VO –
https://www.youtube.com/watch?v=_MQVCT1WMg4

The CERN-VRE (Virtual Research Environment)
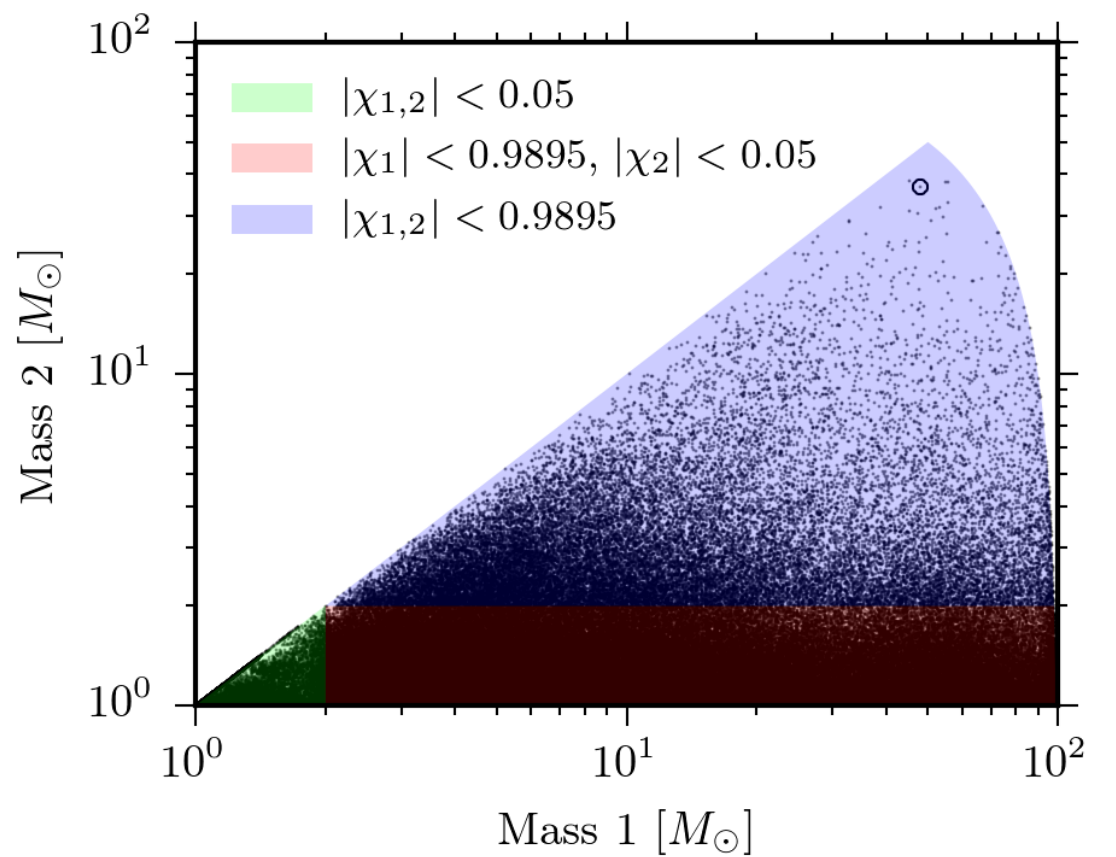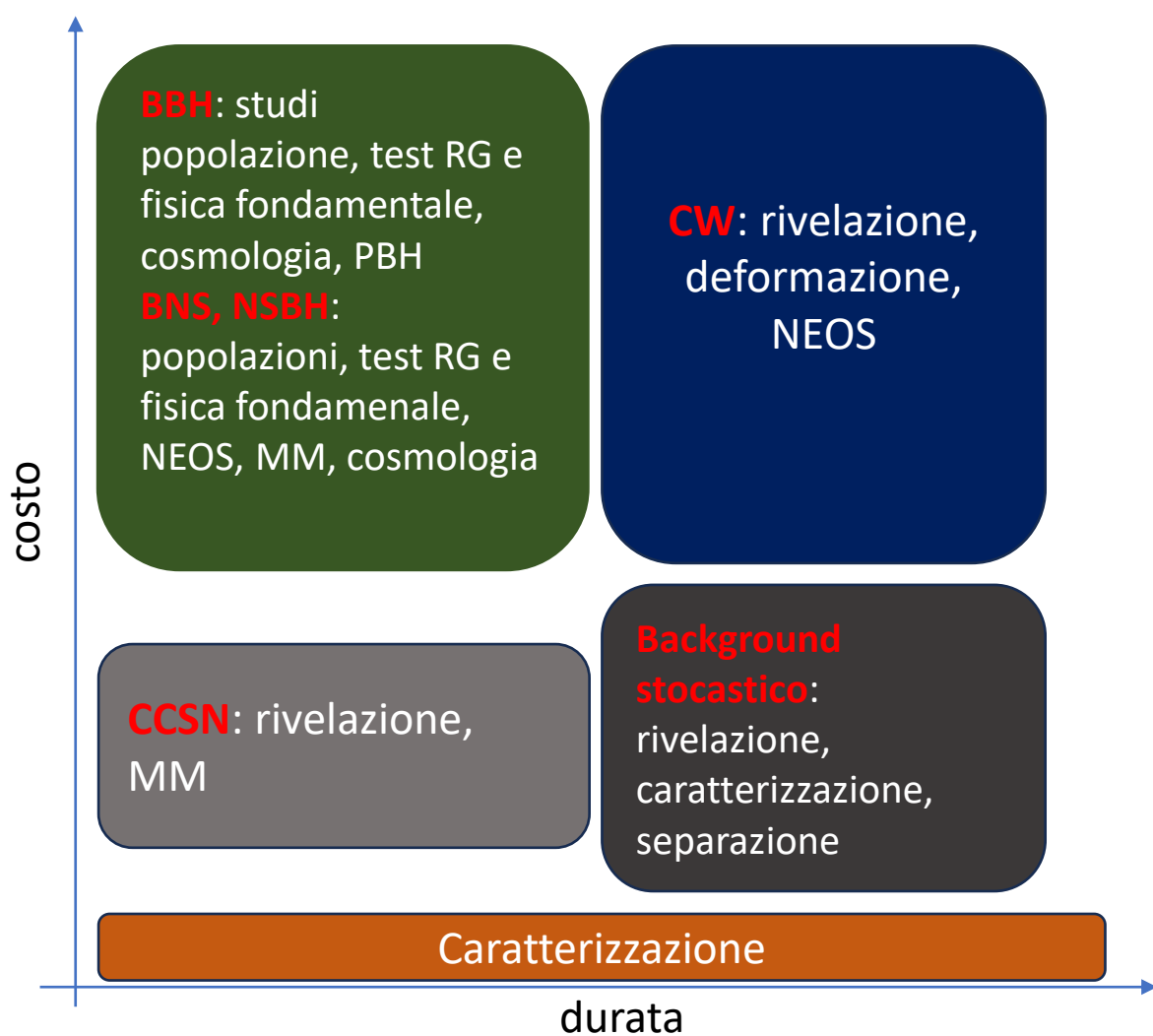
escape-cern-ops@cern.ch

An **analysis facility**, which allows the following services to be connected:

- ESCAPE **Data Lake infrastructure** - A federated distributed storage solution (based on RUCIO).
- Computing cluster powered by **REANA** (analysis platform with special focus on reanalysis).
- Accessible via a **Jupyter** frontend that can
  - load user **software environments,**
  - use a **Notebook** service
  - access to **CVMFS** repositories.
- By a single login to a federated AAI - **ESCAPE INDIGO IAM**.

BBH: studi popolazione, test RG e fisica fondamentale, cosmologia, PBH
BNS, NSBH: popolazioni, test RG e fisica fondamenale, NEOS, MM, cosmologia

CW: rivelazione, deformazione, NEOS

CCSN: rivelazione, MM

Background stocastico: rivelazione, caratterizzazione, separazione

costo

Caratterizzazione

durata

$$\tau \simeq 2.18s \left(\frac{1.21 M_\odot}{\mathcal{M}}\right)^{5/3} \left(\frac{100\mathrm{Hz}}{f}\right)^{8/3}$$

Legend:
- $|\chi_{1,2}| < 0.05$
- $|\chi_1| < 0.9895, |\chi_2| < 0.05$
- $|\chi_{1,2}| < 0.9895$

	LVK	ET
Rate eventi	$10^2 \, y^{-1}$	$10^5 \, y^{-1}$
Masse	$1 M_\odot < M < 10^2 M_\odot$	$10^{-1} M_\odot < M < 10^3 M_\odot$
Durata	$1s < T < 10^2 s$	$1s < T < 10^5 s$

- Effetto combinato dell'aumento della banda: densità e lunghezza
- Precisione PE? Bias?
- Sovrapposizione eventi
- Parallelismo
- Dipendenza dal segnale

High-level architecture